



NOTES

PERITONEAL PATHOLOGY

GENERALLY, WHAT IS IT?

PATHOLOGY & CAUSES

- Conditions affecting peritoneal cavity (e.g. serosal membrane inflammation, gas)

CAUSES

Peritonitis

- Spontaneous bacterial peritonitis
- Leakage of **gastrointestinal (GI) contents**
- Presence of foreign material
 - Bile, blood, contrast material
- Endometriosis
- Peritoneal dialysis

Pneumoperitoneum

- Perforation of anterior duodenal ulcer
- Iatrogenic
- Increased intrathoracic pressure

SIGNS & SYMPTOMS

Peritonitis

- Fever, chills, tachycardia**
- Ascites**, abdominal distention, abdominal rigidity, spider angiomas, jaundice
- Anorexia, nausea, vomiting, diarrhea
- Encephalopathy; delirium, confusion, cognitive decline
- Absent bowel sounds, ileus

Pneumoperitoneum

- Abdominal pain, rigidity**
- Absent bowel sounds, ileus

DIAGNOSIS

DIAGNOSTIC IMAGING

X-ray

- Peritonitis
 - Supine, upright abdominal films
- Pneumoperitoneum
 - Upright chest radiography
 - Subdiaphragmatic free gas; cupola sign
 - Rigler's sign, football sign
 - Lateral decubitus X-ray

CT scan

- Pneumoperitoneum
 - Small quantities of air

LAB RESULTS

Paracentesis

- Peritonitis
 - If ascites present

Complete blood count (CBC)

Blood chemistry

TREATMENT

MEDICATIONS

- Systemic antibiotics

SURGERY

- Exploratory laparotomy

VISIT...

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PERITONITIS

osms.it/peritonitis

PATHOLOGY & CAUSES

- Inflammation of serosal membrane lining abdominal cavity, organs (AKA peritoneum).
- Neutrophilic infiltration, formation of fibrinopurulent exudate

CAUSES

- Spontaneous bacterial peritonitis
 - Bacterial migration from GI lumen; more common in people with ascites/cirrhosis
 - *E. coli*, *Klebsiella*, *Pseudomonas*, *Proteus*, Gram-negatives
- Leakage of GI contents; most common; perforated viscera
 - Proximal GI tract perforation → Gram-positive bacteria
 - Distal GI tract perforation → Gram-negative bacteria
- Foreign material
 - Bile, blood, contrast material
- Endometriosis
- Peritoneal dialysis

SIGNS & SYMPTOMS

- Fever, chills, tachycardia
- Ascites, abdominal distention, abdominal rigidity, spider angiomas, jaundice
- Anorexia, nausea, vomiting, diarrhea → hypovolemia, renal failure
- Absent bowel sounds, ileus
- Early stages
 - Dull, poorly localized abdominal pain
- Late stages
 - Severe, localized abdominal pain; acute abdomen
- Encephalopathy; delirium, confusion, cognitive decline

DIAGNOSIS

DIAGNOSTIC IMAGING

Supine, upright abdominal films

- Subhepatic/subdiaphragmatic free air, abscesses in case of perforated viscus

LAB RESULTS

- Leukocytosis, acidosis

Paracentesis

- If ascites present
- Serum ascites albumin gradient (SAAG)
 - > 1.1 in spontaneous bacterial peritonitis
- Neutrophil count > 250 cells/microliter

TREATMENT

MEDICATIONS

Systemic antibiotics

- Third generation cephalosporins/quinolones

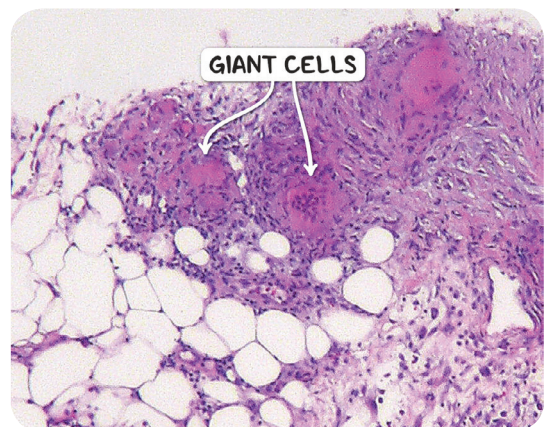


Figure 41.1 The histological appearance of tuberculous peritonitis, a rare kind of peritonitis. There are numerous epithelioid macrophages and giant cells infiltrating the peritoneal biopsy.

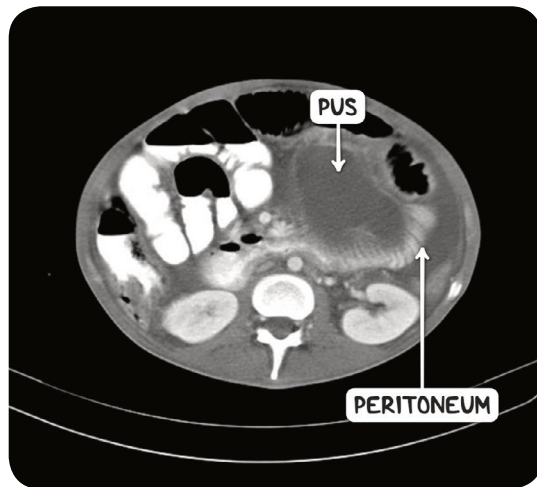


Figure 41.2 An abdominal CT scan with oral contrast in the axial plane demonstrating severe peritonitis. There is diffuse peritoneal thickening and large amounts of radiodense fluid. On laparotomy this was discovered to be pus.

PNEUMOPERITONEUM

osms.it/pneumoperitoneum

PATHOLOGY & CAUSES

- Abnormal collection of gas within peritoneal cavity.

CAUSES

- Most common
 - Perforation of anterior duodenal ulcer secondary to peptic ulcer disease
- Iatrogenic
 - Abdominal surgery; resolves spontaneously
- Increased intrathoracic pressure (mechanical ventilation, chest compressions)

SIGNS & SYMPTOMS

- Abdominal pain, rigidity
- Absent bowel sounds, ileus

DIAGNOSIS

DIAGNOSTIC IMAGING

CT scan

- Small quantities of air

Upright chest radiography

- Subdiaphragmatic free gas; Cupola sign (free intraperitoneal air, well-defined superior border formed by diaphragm)

Supine abdominal X-ray

- Rigler's sign (double wall sign): both sides of abdominal wall visible
- Football sign (massive pneumoperitoneum): ellipsoid shape of abdominal cavity outlined by gas

Lateral decubitus X-ray

- Free gas between liver, abdominal wall

TREATMENT

SURGERY

Exploratory laparotomy

- Repair perforated viscus

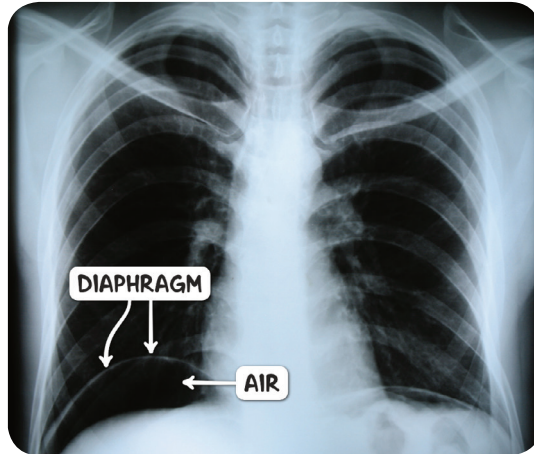


Figure 41.4 An erect chest radiograph demonstrating a sub-diaphragmatic air bubble, diagnostic of pneumoperitoneum.

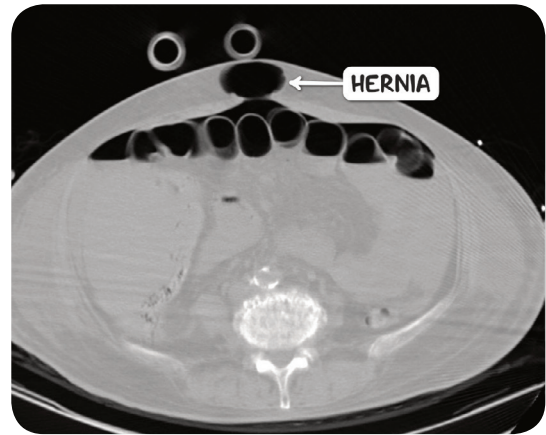


Figure 41.3 A CT scan in the axial plane demonstrating air in the peritoneal cavity. The air has also tracked along an umbilical hernia.